European Commission

International Agency for Research on Cancer
World Health Organization

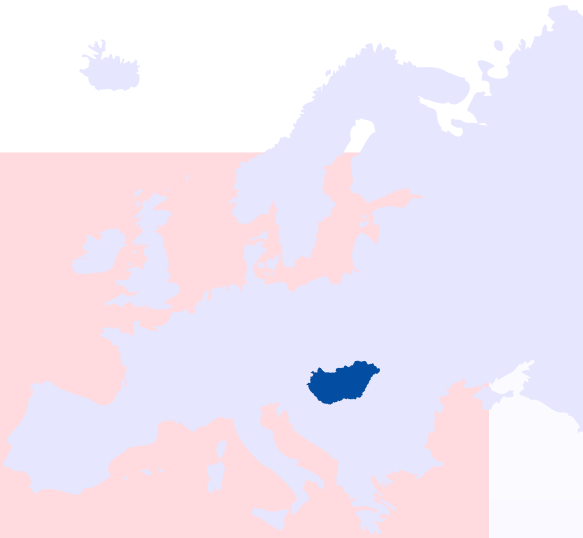
Erasmus MC

Country Factsheet Series

Socio-economic inequalities in cancer mortality across the EU27, Norway and Iceland

Hungary

Key messages



In Hungary, total cancer mortality rates in 2015–2019* were higher for men than for women, and in both sexes, significantly higher than the European average. Among men, rates varied considerably across educational levels, according to a social gradient and with a progressive increase as educational levels decreased. Among women, those with primary education had higher cancer mortality rates compared to other educational groups although similar rates were found between secondary and tertiary education. A social gradient was found in cancer mortality for almost all cancer types, except for breast cancer.
The largest inequalities in cancer mortality were found for lung cancer in both sexes. Despite improvements in care in Hungary, socio-economic and geographical disparities in access to care mainly due to the shortage of cancer care specialists and equipment are a major problem.
Educational inequalities in cancer mortality are large in Hungary.

Educational inequalities in total cancer mortality

In Hungary, mortality rates for total cancer** in 2015–2019 were much higher than the corresponding European average***, for both sexes. Among men, rates were higher than in women, and showed a social gradient. The social gradient was less clear among women, even though low educated women had much higher rates, compared to other educational groups. Men with primary education had over two times higher mortality rates compared to those with tertiary education (1127 vs 507 per 100,000). Among women, those with primary education had about 40% higher mortality rates compared to their counterparts with tertiary education (512 vs 367 per 100,000).
The difference in rates between primary and tertiary education (i.e., inequality gap) was similar to the European average and higher than that of all countries in the Central/Eastern European region.

* In Hungary, estimates were obtained using the method for group A countries. See methodological notes at the end and the Methodological report for more information
** All cancers combined
*** European average is calculated considering 27 EU Member states + Norway and Iceland

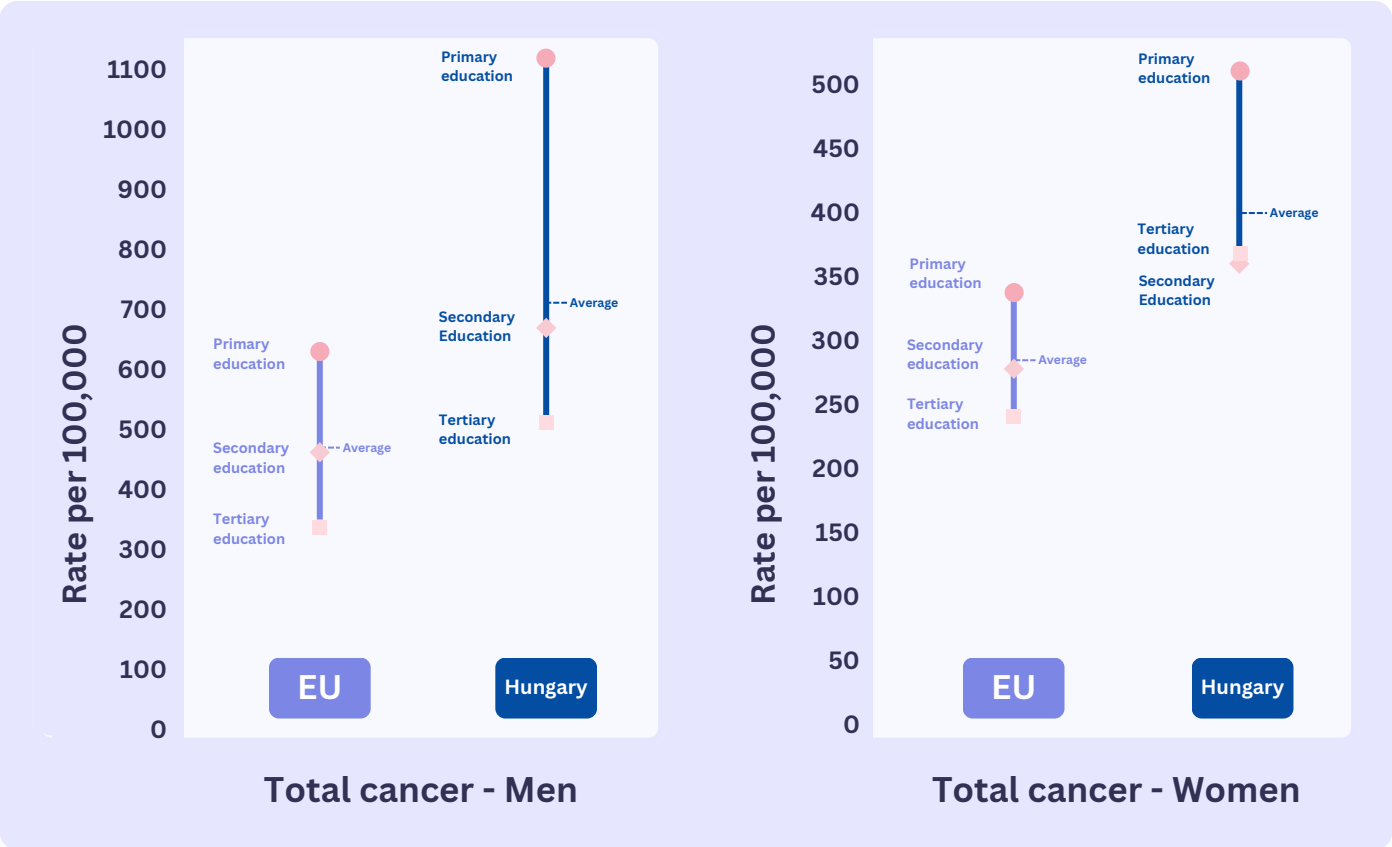


Figure 1. Total cancer mortality by sex and education level

Educational inequalities in mortality by cancer site

Lung cancer

Lung cancer mortality was the largest contributor to total cancer mortality in men and the second in women, with national rates higher than the European average, for both sexes. Rates were more than twice as high in men compared to women, and with a marked social gradient, of increasing rates with decreasing educational level. Differences in smoking patterns by educational levels in the past may have contributed to the inequalities in lung cancer mortality. In 2002, smoking prevalence in Hungary was higher in men (38%) compared to women (28%), and more recent data show a marked educational gradient [1, 2]. Air pollution levels in Hungary are currently higher than the EU average, and disproportionately affect socially disadvantaged populations [3].

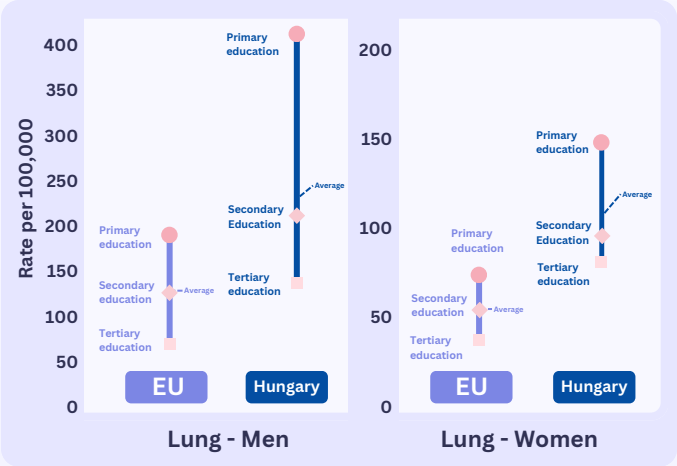


Figure 2.a. Cancer-specific mortality by sex and education level: lung

Colorectal and stomach cancers

Colorectal and stomach cancer mortality rates in

Hungary exceeded the European average in both sexes, but were higher in men compared to women. A strong social gradient was observed for both cancer sites, with progressively lower mortality rates as education levels increased (although among women, colorectal cancer mortality rates were similar for secondary and tertiary education). The observed inequalities in colorectal cancer in men and stomach cancer may be partly attributed to varied past patterns in alcohol consumption, poor diet, physical inactivity and obesity [3, 4], infection with Helicobacter pylori [5] (for stomach cancer) and screening participation (for colorectal cancer) across social groups. In 2014, Hungarians with lower education levels (4%) were more likely to report hazardous alcohol consumption than those with higher education (1.7%) [3]. A social gradient was also observed in colorectal cancer screening participation rates, which could, at least partly, explain inequalities in mortality for that cancer. In 2019, participation rates for colorectal cancer screening were much lower than the European average (15% vs 33%), with marked differences between high and low educated (20% vs 9%) [3].

Breast cancer

Breast cancer mortality rates were higher than the European average but showed no clear social gradient. Rates were similar across education groups, although slightly higher among women with tertiary education. The uptake of breast cancer screening is higher among highly educated women [2]. Also, other factors, such as delayed diagnosis and untimely treatment options, are generally more unfavourable for women with lower education levels. On the other hand, highly educated women are more likely to exhibit reproductive factors that are associated with a higher risk of breast cancer, such as having fewer children, giving birth at a later age, and increased use of hormone replacement therapy. These contrasting influences might have contributed to observed patterns of breast cancer mortality across educational groups.

Prostate cancer

Prostate cancer mortality rates were higher than the European average. A social gradient was evident, with men with primary education experiencing higher mortality rates compared to those with secondary and tertiary education. These disparities may be partly attributed to inequalities in timely access to early diagnosis, treatment and treatment options [6].

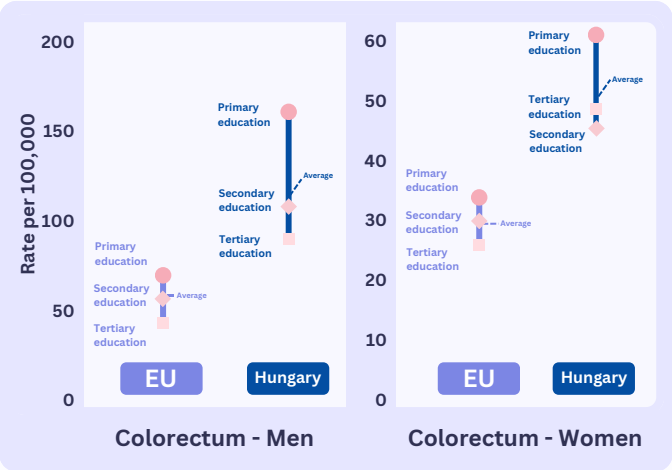


Figure 2.b. Cancer-specific mortality by sex and education level: colorectum

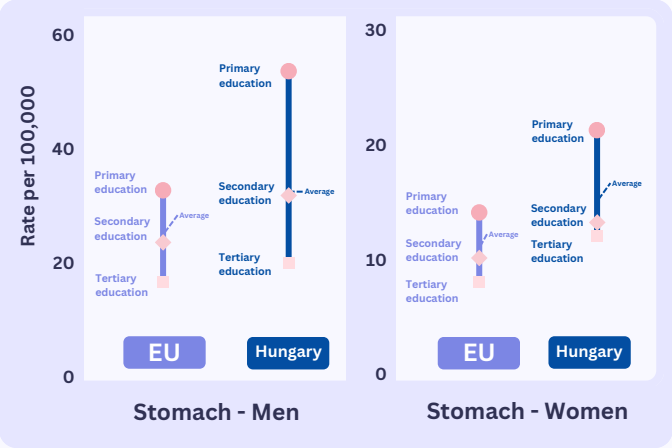


Figure 2.c. Cancer-specific mortality by sex and education level: stomach

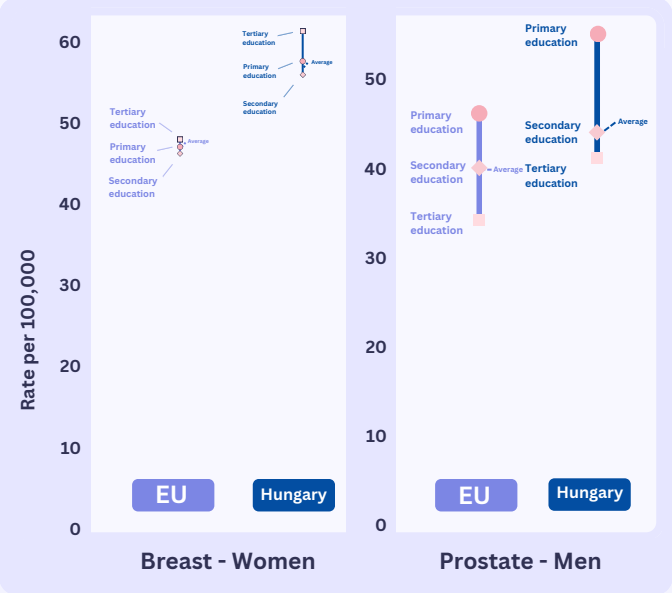


Figure 2.d. Cancer-specific mortality by sex and education level: breast (left), prostate (right)

Cervical cancer

Cervical cancer mortality rates were higher than the European average, and varied according to a social gradient, with the highest mortality rates found among women with primary education. This gradient may be largely explained by differences across educational levels in past participation in cervical cancer screening programmes. In 2014, women with higher education levels (77%) were more than twice as likely as those with lower education levels (36%) to have undergone a cervical smear test in the previous three years [3]. The up-scaling and equitable implementation of human papillomavirus (HPV) vaccination and HPV-based screening in the country has the potential to help reduce the future disease burden and associated inequalities.

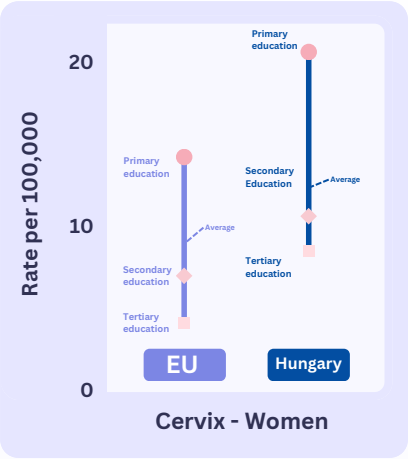


Figure 2.e. Cancer-specific mortality by education level: cervix

Methodological notes:

Findings are based on the ERAINHE dataset, which includes mortality data by educational attainment, age group, sex, period, country and cause of death. For most countries, the data are derived from individually-linked records, collected and harmonized in different periods in different projects (for the full description see the Methodological report). Geographical and temporal gaps in the ERAINHE dataset were addressed using complementary data sources and appropriate estimation methodologies tailored to the availability of the data. Age-standardised (European Standard Population) mortality rates by educational level for individuals aged 40–79 years were thus estimated for 2015–2019, using four different methods:

- **Method for group A countries,** for countries with at least 3 recorded observations over different periods of time: actual observed data for 2015-2019 (when available) or projections based on linear regression models;
- **Method for group B countries,** for countries with 1 or 2 recorded observations only: incomplete data combined with trends from other databases;
- **Method for group C countries,** for countries with no observations for certain cancer sites: integration of data from different databases with information from countries in the same geographical area;
- **"Back-calculation" method,** for countries without available data in the ERAINHE dataset: combination of population a mortality data from different databases with information on educational inequalities in cancer from countries in the same geographical area.

In Hungary, the method for group A countries was used.

Contact information

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References:

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